The information in this booklet must not be given to the public

British Rail | Train Crew Manual

Class 58 Locomotives

Drivers Fault-finding Data

Issue 1

BR.33056/91
March 1983

CONTENTS

Fault		Page
1.	Engine STOPS Indicator light RED	1
2.	Engine STOPS Indicator lights OUT Brake application	2
3.	Complete LOSS OF POWER Brake application General Fault light RED which reverts to YELLOW when controller is closed LOSS OF MAIN RESERVOIR PRESSURE (MR) (below 4.5 bar)	2
4.	Complete LOSS OF POWER Brake application General Fault light RED which reverts to YELLOW when controller is closed LOSS OF BRAKE PIPE PRESSURE (below 3.4 bar) Main reservoir pressure adequate (above 6.5 bar)	3
5.	Complete LOSS OF POWER General fault light RED which reverts to YELLOW when controller is closed	4
6.	Complete LOSS OF POWER General fault light RED even when controller is closed	5
7.	Partial LOSS OF POWER Wheelslip light RED with controller open	5
8.	Partial LOSS OF POWER	5

DRIVERS ARE REMINDED THAT THEY MUST NOT, AT ANYTIME, ATTEMPT TO WALK ALONG THE FOOTPLATING WHICH RUNS ALONG BOTH SIDES OF THE LOCOMOTIVE.

INDICATIONS in DRIVING COMPARTMENT	POSSIBLE FAULT	RECOMMENDED ACTION
1. Engine STOPS Indicator light RED	A. Auxiliary alternator output volts too high	Check Over Voltage Relay (OVR) on control cubicle in clean air compartment. If 'tripped' reset and attempt to restart the engine. NOT MORE THAN THREE ATTEMPTS TO RESET & RESTART ARE PERMITTED. If unable to reset/restart locomotive is a failure.
	B. Auxiliary alternator output volts too low	Check auxiliary n(eutral) fuse (25 amp) in cross corridor No.2 end. If fuse has ruptured and the replacement also ruptures on attempting to restart the engine then locomotive is a failure.
	C. Low water level	Check water level indicator lights in cross corridor No.2 end, if EMPTY light is illuminated locomotive is a failure until coolant system can be topped up.
	D. Engine overspeed	Check remote overspeed device on left hand brake frame in clean air compartment. If indicator is RED depress reset push button until indicator shows GREEN and then release button. If device immediately trips again on attempting to restart engine then locomotive is a failure. If device trips again when full power is restored then reset ONCE MORE and restrict power controller opening to control engine r.p.m.
	E. Fuel starvation	Check Fuel Pump (FPB) MCB on control cubicle, if tripped and will not reset locomotive is a failure. If MCB is set check tank gauge on either side of the locomotive.
	F. Low lub oil pressure	Attempt to restart from No.2 driving compartment and observe lub. oil pressure gauge in cross corridor. If pressure does not reach 2.2 bar the engine will not continue to run when start button is released, and locomotive is a failure.

INDICATIONS in DRIVING COMPARTMENT	POSSIBLE FAULT	RECOMMENDED ACTION
2. ENGINE STOPS Indicator lights OUT Brake application	A. Control Circuit (CCB) MCB tripped	Check CCB on control cubicle. If CCB will not reset locomotive is a failure.
	B. Loss of battery supply supply	Check Battery Charge (BCB) MCB on control cubicle. Even if BCB will reset the low battery voltage protection system will prevent the engine from being restarted.
3. Complete LOSS OF POWER, brake application General fault light RED which reverts to YELLOW when controller is closed. LOSS OF MAIN RESERVOIR (MR) PRESSURE (below 4.5 bar)	A. Compressor unloader valve continually venting to atmosphere	Close the compressor unloader isolating cocks (adjacent to the fuel tanks on either side) in turn and if either or both stops the venting to atmosphere observe that the safety valve operates to protect the system at 10.7 bar.
	B. Leakage on system	Examine system, particularly drain cocks, coupling cocks and flexible hoses. Close cocks between locomotive and train to identify location.

INDICATIONS in DRIVING COMPARTMENT	POSSIBLE FAULT	RECOMMENDED ACTION
4. Complete LOSS OF POWER, brake application. General fault light RED which reverts to YELLOW when controller is closed. LOSS OF BRAKE PIPE PRESSURE (below 3.4 bar) Main reservoir pressure adequate (above 6.5 bar)	A. Brake Control (BB) MCB tripped.	Check BB on control cubicle. If BB will not reset locomotive is a failure.
	B. Defective DSD or AWS equipment	Check Automatic Warning (AWB) MCB on control cubicle. If AWB will not reset then isolate AWS equipment by switch on right hand brake frame in clean air compartment. If brake pipe pressure cannot be regained then DSD is probably defective (there is no isolating cock) and locomotive is a failure. **REMEMBER THAT IF THE MASTER SWITCH IS INADVERTENTLY MOVED FROM THE 'FORWARD' OR 'REVERSE' POSITION WHILST THE LOCOMOTIVE IS STILL MOVING, OR BEFORE IT HAS BEEN AT A STAND FOR THREE SECONDS, THEN A D.S.D. BRAKE APPLICATION WILL BE INITIATED.** To reset the equipment depress the D.S.D. foot pedal, select FOR or REV and when the brakes have released the master switch may be returned to E.O. and the D.S.D. Pedal released.
	C. Brake pipe pressure control unit de-energised	Check Battery Charge (BCB) MCB on control cubicle. If tripped then low voltage has de-energised the unit and locomotive is a failure.
	D. Main reservoir governor defective	Check 'toggle' on governor on right hand brake frame, should be 'up'.
	E. Leakage on the brake pipe	Check for leakage, particularly cocks and flexible hoses. Close cocks between locomotive and train to identify location.

INDICATIONS in DRIVING COMPARTMENT	POSSIBLE FAULT	RECOMMENDED ACTION
5. Complete LOSS OF POWER, general fault light RED which reverts to YELLOW when controller is closed.	A. Diode fault in main rectifier	Check Rectifier Fault Relay (RFR4) on control cubicle. If tripped locomotive is a failure DO NOT RESET. If engine is subsequently stopped for any reason it will not be possible to restart it.
	B. Power earth fault	Close controller, pause and re-open. If power is regained proceed (the Power Earth Fault Relay PEFR will remain 'tripped' as an indication to maintenance staff). If power cannot be regained isolate each pair of traction motors in turn, testing for power after each isolation. If power is regained CHECK AXLES CONCERNED FOR ROTATION before proceeding, and restrict maximum amps. NOTE: There will be no field diversion and engine r.p.m. will be restricted. Slow speed control not available.
	C. Loss of control air pressure (below 3.4 bar)	Check control cubicle isolating cock and flexible hose on end of right hand brake equipment frame.
	D. Brake pipe governor defective	Check 'toggle' which should be 'up' with brake pipe pressure at 5.0 bar.
	E. Main reservoir governor defective	Check 'toggle' which should be 'up' with main reservoir pressure above 6.5 bar.
	F. Main alternator or rectifier overheated	No visible indication – locomotive is a failure. Power will be regained only when equipment has cooled down – which may take some time.
	G. Traction motor blower failure WHEN RUNNING WITH TRACTION MOTORS ISOLATED	Check Blower Motor 1 and 2 (BMB1 & BMB2) MCB on control cubicle, if tripped and will not reset locomotive is a failure.

INDICATIONS in DRIVING COMPARTMENT	POSSIBLE FAULT	RECOMMENDED ACTION
6. Complete LOSS OF POWER, general fault light RED even when controller is closed.	High water temperature (above 110°C)	Power will be regained when coolant temperature falls to 62°C. Request assistance and work locomotive accordingly if fault persists. The Water Temperature Relay (WTR) on the control cubicle will remain tripped as an indication to maintenance staff.
7. Partial LOSS OF POWER Wheelslip light RED with controller open.	A. Wheelslip	Work locomotive accordingly. Use position 4 on slow speed selector switch and slow speed switch (on power controller pedestal) at SLOW SPEED if difficulty experienced in moving a heavy train from rest in poor conditions.
	B. Traction motor fault	Examine traction motors for evidence of overheating and isolate each pair in turn, testing for power after each isolation until wheelslip light remains YELLOW. CHECK AXLES CONCERNED FOR ROTATION before proceeding and restrict maximum amps. NOTE: There will be no field diversion and engine r.p.m. will be restricted. Slow speed control not available.
8. Partial LOSS OF POWER	A. Engine r.p.m. low	Check Blower Motor 1 and 2 (BMB1 & BMB2) MCB on control cubicle, if tripped and will not reset request assistance as necessary. Check for traction motors isolated (by previous Driver).
	B. Regulating air pressure low	Check hose connections and isolating cocks on buffer beams or between locomotives when in multiple. Check power controller handles are all at OFF in all unoccupied driving compartments.